

Surgery for Epilepsy Information Guide



INDIAN ACADEMY OF
NEUROLOGY

A Public Information Initiative

Medications can control seizures well in approximately 70% of people with epilepsy. But in the remaining 30%, medicines are not effective and in these patients, brain surgery may be an option. Surgery has been an accepted form of treatment along with ways of identifying areas to be removed, more of these operations are being done with good success. Surgery can be performed on both children and adults. However, it is not a suitable treatment for everyone who has epilepsy, or for everyone in whom medications are ineffective.

The main aim of epilepsy surgery is to remove the area of the brain producing the seizures.

Surgery is considered only if the area of the brain where the seizures begin, can be clearly identified, and that area to be removed is not responsible for any important function, e.g., sensation, movement, or language functions.

Types of epilepsy surgery

The type of surgery used depends on the type of seizures and the area of the brain where the seizures begin. The surgical options include:

Temporal Lobectomy: This is the commonest surgery performed. Approximately, 80% of people undergoing this surgery will be seizure-free after surgery. A larger part of the temporal lobe is removed.

Lesionectomy: This is done to remove areas of injury or defect such as tumour, focal developmental abnormality, scar tissue, or malformed blood vessels that might be responsible for seizure activity.

Hemispherectomy: Rarely, a child or an adult may have severe brain disease on just one side of the brain which produces uncontrollable seizures and paralysis on the opposite side of the body. Hemispherectomy is used to treat only very severe epilepsy in children with damage to one whole side of the brain. The damaged side of the brain is disconnected from the normal brain.

Multiple Subpial Transection: Some seizures originate in or spread to parts of the brain that are responsible for important functions such as movement or language. Removing these areas would lead to paralysis or loss of language function. A surgical technique called multiple subpial transection (MST) may be performed in such situations. It involves making small incisions in the brain which interfere with the spread of seizure impulses. This technique may be used alone or in addition to a lesionectomy.

Corpus Callosotomy: The corpus callosum is a band of nerve fibers connecting the two halves (hemispheres) of the brain. A corpus callosotomy is an operation in which all or part of this structure is cut, disabling communication between the two sides of the brain and preventing the spread of seizures from one side of the brain to the other. This procedure is offered to patients with extreme forms of uncontrollable epilepsy who have intense seizures that lead to violent falls and potentially serious injury.

How is epilepsy surgery planned?

Good communication between the doctor and the patient is important with all epilepsy treatments, but especially when surgery is being considered. The patient and the family should have a realistic picture of the benefits, the risks, and the chances of complete or partial control of seizures after surgery. There are emotional changes as well. People may feel disappointed if their seizures do not stop completely, or if they have to go on taking medicine, at least for a while or continuously, after the surgery. It is better if both the patient and the family know what to expect and have talked about them with the multidisciplinary medical team (which may include neurologists, neuro-surgeons, nurses, and neuro-psychologists) before any

operation takes place.

It may be stressful and difficult to meet the new expectations that others may have, or to adjust to being a person without seizures after having them for so long. In most cases, these reactions are temporary. Like other issues that may arise in connection with epilepsy surgery, these reactions can be handled.

About epilepsy surgery

The operation may take several hours to perform, as surgeons first locate and then remove the area of the brain identified in pre-testing as the source of the seizure activity. EEG recordings during the surgery help the physicians map out the exact area of brain to be removed. After the operation, the patient stays up to a week or less in the hospital and then goes home and continues to recuperate. After about three to eight weeks he or she can usually go back to normal activities.

Post-surgery recovery

Some people are completely free of seizures after surgery. For others, the frequency of seizures is significantly reduced. In some cases, surgery may not be successful and a second surgery (re-operation) may be recommended. Most patients will need to continue taking epilepsy medications for a year or more after surgery. Once seizure control is established, medications may be reduced or eliminated. Some people may have to continue with medication indefinitely to retain seizure control.

Disclaimer:

This brochure is for the general information of the public and the patients. People should not self-medicate themselves with the medicines and treatments mentioned here. Before taking any of the medications mentioned in the information brochure, please consult your neurologist.

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